POLAR BEAR PASS
NATIONAL WILDLIFE AREA

MANAGEMENT PLAN

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MANAGEMENT PLAN

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and

POLAR BEAR PASS

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YELLOWKNIFE, NORTHWEST TERRITORIES

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1.0 INTRODUCTION

1.1 National Wildlife Areas

National Wildlife Areas (NWAs) are established under the *Canada Wildlife Act* and are administered by Environment Canada (EC) for the purposes of research, conservation, and interpretation of wildlife populations and their habitats. In this context, "wildlife" refers to any non-domesticated animal. NWAs are sites which are nationally or internationally significant. General regulations relating to the management of NWAs are listed in Appendix 1.

1.2 Purpose of a Management Plan

Management plans are prepared for all NWAs. A management plan is a public document detailing the goal, objectives and management policies for a NWA. In a plan, the NWA and its resources are described in sufficient detail to provide a context for the management policies. The development of a plan is consistent with EC policy of public consultation. This policy is intended to promote a dialogue between the public, interest groups, other government agencies, and EC personnel in order to assist the Department in formulating effective programs, policies and regulations.

This management plan relates to Polar Bear Pass NWA (hereinafter referred to as "the Area") on Bathurst Island, Northwest Territories.

1.3 Historical Perspective

Numerous archaeological sites attest to the extended occupation of Polar Bear Pass and the use of its natural resources. Wide appreciation of the area and its wildlife resulted from the activities of the National Museum of Natural Sciences. Since 1968, the Museum has operated a research station and conducted studies on the life histories and behavioural adaptations of arctic animals at Polar Bear Pass. As a result of this research, the Bracebridge-Goodsir Inlet area was identified for protection under the International Biological Programme (IBP) in 1975. In 1982 the Area was declared a Wetland of International Importance under the Ramsar Convention.

Extensive consultations with industry, native groups, the public and other interested parties culminated in the designation of Polar Bear Pass as a NWA in September, 1986. The lands were withdrawn from disposition pursuant to the *Territorial Lands Act* and the *Canada Petroleum Resources Act*. The Area encompasses approximately 2624 square kilometres (Figure 1, Appendix 2). All mineral claims and oil and gas rights were extinguished prior to designation. The Area is subject to the pending land selection under the Tungavik Federation of Nunavut land claim.

Following designation, the Canadian Wildlife Service (CWS) and the Government of Northwest Territories (GNWT) Department of Renewable Resources completed an "Agreement for the Cooperative Management of Wildlife of Polar Bear Pass National

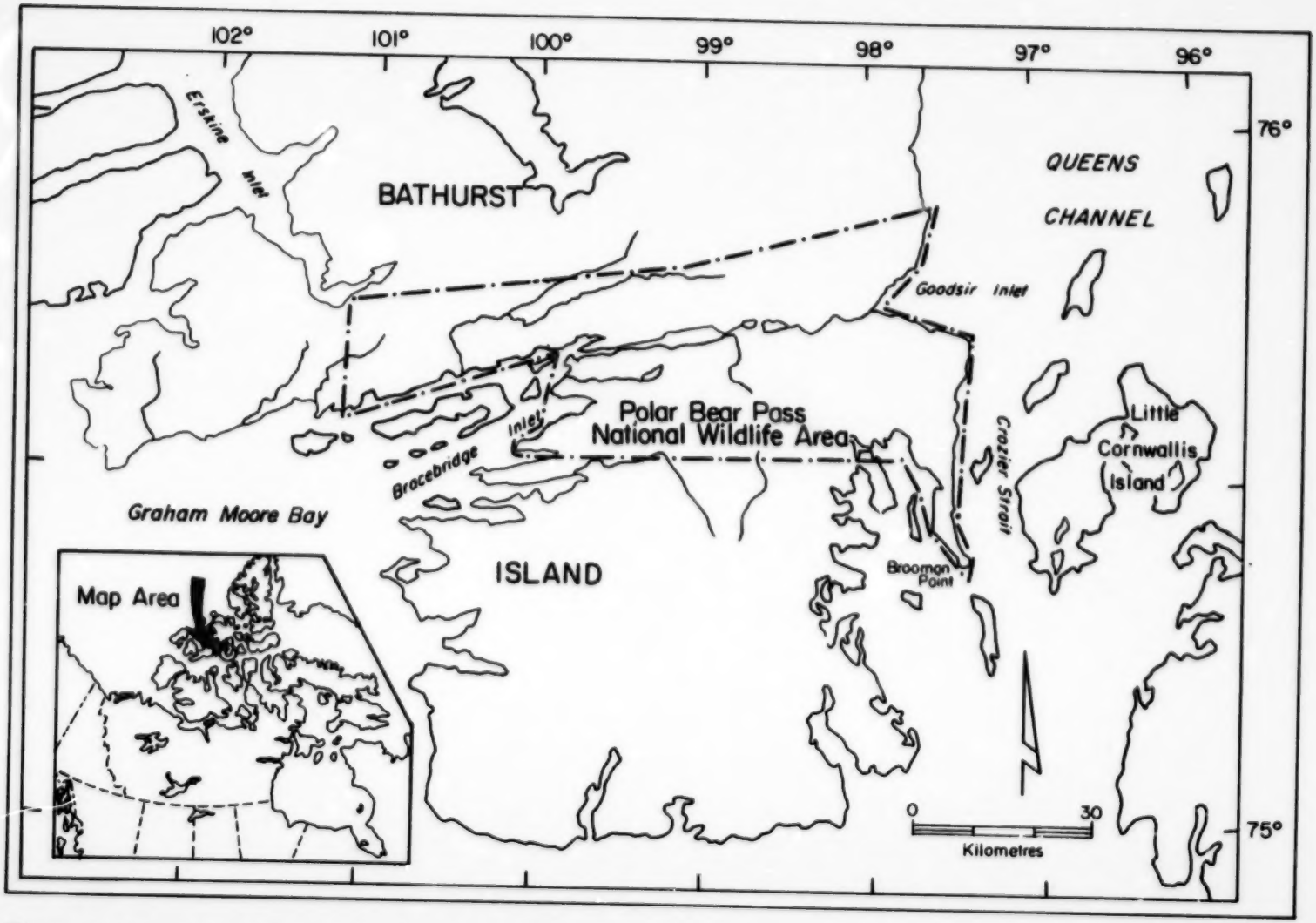

Figure 1. Location of Polar Bear Pass National Wildlife Area.

Wildlife Area". CWS is presently developing an agreement with Department of Fisheries and Oceans (DFO) regarding wildlife under its mandate.

An Area Advisory Committee chaired by CWS was established to assist in developing the management plan. This Committee includes representatives from: Resolute Hunters' and Trappers' Association (HTA), Department of Indian and Northern Affairs (INAC), Department of Fisheries and Oceans (DFO), National Museum of Natural Sciences (NMNS), and GNWT Department of Renewable Resources.

1.4 Environment Canada Mandate

Under the *Migratory Birds Convention Act*, EC-CWS is responsible for managing populations of migratory birds which occur within Canada. Under this Act, EC-CWS administers the Migratory Bird Regulations, which address the harvest of migratory birds, and the Migratory Bird Sanctuary Regulations, which provide for the establishment and management of Bird Sanctuaries.

Under the *Canada Wildlife Act*, EC-CWS may take measures necessary for the protection of any species of wildlife in danger of extinction, or acquire lands for the purposes of wildlife research, conservation, or interpretation.

1.5 Department of Renewable Resources Mandate

GNWT has legislative authority for the management of wildlife under the *Northwest Territories Act*. Accordingly, the territorial legislature has enacted the *Wildlife Act*, which is administered by the Department of Renewable Resources. The Department is responsible for managing wildlife populations throughout the Northwest Territories. Its activities focus on game species and the regulation of hunting through the issuance of licences and the designation of management zones and hunting seasons.

1.6 Indian and Northern Affairs Canada Mandate

INAC administers (in whole or in part) over 45 Acts and Regulations relating to the North. Pursuant to the *Department of Indian Affairs and Northern Development Act* and the *Territorial Lands Act*, INAC, through the Northern Affairs Program, is responsible for the "control, management and administration" of northern lands, the coordination of activities of other federal departments and agencies on them, and the disposition of land and resource rights. INAC also administers the *Northern Inland Waters Act*, which provides for the conservation, development and use of water in the NWT.

1.7 Fisheries and Oceans Canada Mandate

DFO, under the *Fisheries Act*, is responsible for Canada's inland and marine fisheries, including marine mammals. This responsibility includes the management of fish and marine

mammal populations, the protection of habitat on which they depend and the regulation of their harvest.

2.0 MANAGEMENT GOAL

Polar Bear Pass National Wildlife Area will be maintained as a natural ecosystem. Management practices will focus on habitat protection and the conservation of all wildlife populations that use the Area.

3.0 MANAGEMENT OBJECTIVES

The management objectives for Polar Bear Pass NWA are:

1. To manage the Area according to sound ecological principles.

2. To protect wildlife and wildlife habitats of the Area from activities which could reduce the land's capability to support wildlife.

3. To encourage biological research which will increase understanding of the Area.

4. To encourage public awareness of and appreciation for the natural resources of the Area.

4.0 MANAGEMENT POLICIES

4.1 Management Authority

The Management Authority for the Area is the Minister of the Environment represented by the Regional Director, CWS, Western and Northern Region. The Management Authority will direct the management of the Area in consultation with: the Director, Renewable Resources and Environment, INAC; the Director, Wildlife Management Division, GNWT Department of Renewable Resources; and, the Regional Director, Central and Arctic Region, DFO.

4.2 Land Management

The lands of the Area will be managed in accordance with the *Canada Wildlife Act* and the *Territorial Lands Act*. The Ministers of INAC and EC retain full concurrent jurisdiction over these lands. Wildlife research, conservation, and interpretation are the responsibilities of the Minister of EC, whereas all other matters normally dealt with under the *Territorial Lands Act* are the responsibility of the Minister of INAC.

4.3 Wildlife Management

CWS and the Departments of Renewable Resources and Fisheries and Oceans will manage the wildlife of the Area in a cooperative manner. In accordance with Section 4(2)c of the *Canada Wildlife Act*, the NWT *Wildlife Act* and the *Fisheries Act* apply to the appropriate wildlife resources of the Area.

4.4 Area Advisory Committee

Once the management plan has undergone public consultation and has been accepted by the Management Authority, the Area Advisory Committee will cease to meet on a regular basis. However, the opportunity for consultation through the Area Advisory Committee will always be maintained and the Committee may be reconvened as required.

4.5 Public Consultation

Management of the Area involves consultation with all interested parties. Public input is a fundamental step in the development and subsequent review of the management plan.

4.6 Review of Management Plan

The management plan will be reviewed, and updated if necessary, after five years initially and at ten-year intervals thereafter. However, the Management Authority may amend the management plan at any time by exchange of letters after consultation with other members of the Area Advisory Committee.

4.7 Multiple Land Use

The primary land use of the Area is wildlife conservation. Other land uses are acceptable provided that they are compatible with wildlife conservation.

4.8 Wildlife Harvesting

Wildlife harvesting within the Area by the Inuit of Resolute Bay is acceptable, provided that wildlife populations are capable of sustaining such harvest. Any harvest is subject to the principles of conservation and its compatability with wildlife research within the Area. The Management Authority will work closely with the Resolute Hunters' and Trappers' Association, the Department of Renewable Resources and the Department of Fisheries and Oceans, as appropriate, when reviewing harvesting policies.

4.9 Rare, Threatened or Endangered Species

Protection of rare, threatened, or endangered species (as defined by the Committee on the Status of Endangered Wildlife in Canada) is a management priority.

4.10 Species Introductions

The introduction of any species of plant or animal to the Area is prohibited.

4.11 Research

Research which will promote a greater understanding of the Area's natural resources is encouraged. All research proposals will be screened by the Management Authority to ensure compatability with management objectives for the Area and other ongoing research. Projects which require extensive collecting, excessive depletion of any population, disturbance of animals or disruption of habitat are not permitted. Appropriate permits are required to conduct research in the Area (see Section 4.16 and Appendix 3).

4.12 High Arctic Research Station

The Research Station is a research unit of the National Museum of Natural Sciences. The objectives of the station are:

1) to study the life histories of arctic animals and their behavioural adaptations to survival in the high arctic;

2) to demonstrate the interrelationships between arctic species, particularly predator-prey relationships;

3) to maintain a record of phenological events to determine the effect of weather upon the local populations; and

4) to obtain data essential in evaluating environmental impacts from man's activities.

Proposed projects at the station will be evaluated by the Assistant Director of Research and Collections, NMNS, in conjunction with the Director of the Research Station, NMNS, for their suitability with regard to established projects. The NMNS may make the station available to qualified workers of other institutions on a fee or exchange basis.

4.13 Significant Natural Features

The Management Authority will endeavour to ensure that all significant natural features of

the Area are protected, while respecting the traditional resource uses by the Inuit of Resolute Bay.

4.14 Archaeological Sites

The Management Authority will endeavour to ensure that all activities within the Area adhere to the provisions of the *Territorial Lands Act* and Regulations and the Archaeological Sites Regulations of the *Northwest Territories Act*.

4.15 Recreation

The Management Authority recognizes that recreational activities associated with wildlife viewing and appreciation are a legitimate land use. Their acceptability, however, is a function of the season, location, nature and intensity of such pursuits. These activities will be subject to periodic review and limits respecting access and types of activities will be imposed if necessary.

4.16 Permits

In accordance with the *Canada Wildlife Act* and Regulations, a permit is required by all persons or parties who wish to enter the Area. Additional permits (Appendix 3) may be required, depending upon the nature of the proposed activities. The Inuit of Resolute Bay do not require a permit for traditional activities within the Area.

4.17 Enforcement

Special efforts are required to ensure that the diverse values of the Area are maintained. Enforcement is a joint responsibility of the management agencies involved with Polar Bear Pass NWA and will be conducted in a cooperative manner.

5.0 NATURAL SETTING

5.1 Climate And Weather

The climate of Polar Bear Pass is characterized by cold temperatures, moderate winds and low precipitation. The three coldest months (December - February) average -35°C; the three warmest months (June - August) have average temperatures between-1°C and 4°C. Snowfall is generally light and approximately half of the total annual precipitation falls as rain.

Although the limited precipitation gives Bathurst Island a "polar desert" climate, several factors have led to a more productive localized ecosystem. The local wind patterns, in combination with the surrounding hills, result in a reduction in cloud cover over the pass.

The resulting increase in radiation from the sun serves to extend the growing season. Other important factors in the creation of this biological oasis include: the persistence of moisture long after snow melt because of poor drainage in the lowlands, an inflow of nutrients with the runoff from the surrounding hills, and the underlying marine sediments.

The sun rises above the horizon in early February and, by the end of April, the Area experiences continuous daylight. Temperatures, which rise above freezing in May, average about 4°C during summer. Rivers break-up in early July, followed by the larger ponds and lakes. Ponds begin to freeze in early September, followed by the larger lakes and rivers. The sun remains below the horizon after the first week of November.

5.2 Geography

The geological structure of Polar Bear Pass is characterized by an east-west thrust fault. Ridges along the north side of the valley form the upthrust part of the fault. The bedrock is limestone and dolomite, having been formed by the hardening of the silt-like material which settled to the bottom of ancient bodies of salt or fresh water, some 350 million years ago.

The hills to the north of Polar Bear Pass are formed from long, regular east-west folds of limestones and shales, most under 180 m in height. The Scoresby Hills, to the northeast, rise to an elevation of 240 m within 8 km of the valley proper. Several streams and rivers flow south through these rolling hills, then east into Goodsir Inlet or west into Bracebridge Inlet. The Goodsir River flows south across the valley, divides into several smaller streams, then swings north and east, emptying into Goodsir Inlet. Hills to the south of the pass are lower, less obviously east-west oriented and rise much more gradually from the valley floor. The major river to the south is the Caledonian River which flows north into Polar Bear Pass, then west into Bracebridge Inlet.

Bathurst Island was covered by ice from about 35,000 to 10,000 years ago. As the last ice age ended, the great weight of ice melted away, allowing the land to rise slowly. As the land continued to rise, parallel terraced ridges of beach gravel were left, marking the changing location of the shoreline. Sea shells dated at approximately 8500 years old and Bowhead Whale skulls found in the pass provide evidence of the ancient sea. From fossil evidence, it seems likely that Muskoxen moved into Polar Bear Pass soon after the land rose above sea level.

Much of the floor of Polar Bear Pass is covered by two large lakes, "Hunting Camp" and "Obloomi", several smaller lakes and many small ponds. Water does not drain off quickly because of the permafrost beneath the shallow layer of soil which thaws each year. Around the ponds and lakes, grasses and sedges form a lush growth seen only in a few other restricted areas on Bathurst Island. These wet meadows are often modified by frost mounds, polygons, and other expressions of patterned ground. Peat hillocks are found along some stream beds.

There is an almost continuous mat of lichens, interspersed with mosses, sedges, grasses, various flowering plants (especially saxifrages and mountain avens), and arctic willow on the river terraces and raised beaches. Vegetation is sparser and the plants grow in more and

more widely separated clusters on the higher slopes. On the hill-tops and ridges lichens dominate with only scattered mats of mountain avens, saxifrages, and arctic poppies. Small areas on most hill-tops and large areas at high elevations have virtually no vegetation and are, in fact, polar deserts.

5.3 Significant Natural Features

Along the northern margin of Polar Bear Pass is a series of tor-like structures (3-10 m high) of exposed Devonian-aged bedrock. These structures are fragments of coral and algae reefs which were formed in the Devonian seas and are now eroded into tall rock stacks of dolomitic limestone, chert, boulder conglomerate, limestone and dolomite. The surfaces of these structures have mosaics of irregular fractures spaced at intervals of a few centimetres. Concave depressions and ledges on the surface of the structures serve as sites for plant colonization. These rock formations also provide nesting habitat for Rough-legged Hawks and Snow Buntings, and denning sites for Arctic Foxes.

6.0 WILDLIFE

6.1 Birds

Fifty-four species of birds, including 30 breeding species, have been recorded within the Area (Appendix 4). Some of these species rely upon nearby marine habitats before coming to land to breed. These coastal areas, especially polynya, are of major significance to birds as well as to their invertebrate food species.

Snowy Owls first appear in Polar Bear Pass in February or March, followed by Snow Buntings and Rock Ptarmigan in April. Spring melt, which is well underway by the second week of June, is assisted by wind-blown dust from adjacent hills which absorbs solar radiation. This warming activates overwintering invertebrates and provides a source of food for Red Knots, Black-bellied Plovers, Sanderlings, Purple Sandpipers, and other shorebirds. The availability of food in this area, in contrast to the surrounding area where winter conditions are prolonged, also attracts several hundred Brant, King Eiders, Snow Geese, and jaegers. This food supply is vital to early-arriving species as it contributes to the replacement of energy reserves lost during migration and to the formation of eggs.

Birds banded at Polar Bear Pass have turned up in far distant areas: Brant in Ireland, King Eiders in Greenland, Red-throated Loons in Chesapeake Bay, USA, Red Knots and other shorebirds in the United Kingdom and France, and Black-bellied Plovers in Florida. Thus, the birds of Polar Bear Pass have taxonomic affinities to both Old and New World populations.

6.2 Mammals

Eleven mammal species, including four marine species, have been recorded at Polar Bear Pass (Appendix 5).

The largest concentrations of Bathurst Island Muskoxen occur within the Area. Up to 120

adult animals, representing 10-30% of the island's population, may be present during the rutting season. Because Muskoxen move between Polar Bear Pass and other parts of Bathurst Island, the Area is important to the entire population of the island. Muskoxen have been observed in the pass from early February to late November. Calving occurs between April and June.

The Peary Caribou population of Bathurst Island, once large enough to allow hunting, has undergone a serious decline. In 1973, up to 100 caribou could be seen in Polar Bear Pass but recently only 10-15 animals have been seen throughout the summer. Although numbers have increased since the mid 1970s, they are still well below the levels recorded in the 1960s. The caribou pass through Polar Bear Pass twice a year as they move from their wintering area on southern Bathurst Island to their summering area in the north.

Polar Bear Pass received its name from the frequency of Polar Bear movements between Bracebridge and Goodsir inlets. Although most bears have been observed between August and September, they have been seen in all months except November to February. Fifteen bears were observed in August and September, 1978.

During summer, Walrus are common off the east coast of Bathurst Island, especially south of Goodsir Inlet. A well known haul-out site occurs 25 km south of Black Point, opposite Kalivik Island. Up to 130 Walrus have been observed at this site.

6.3 Fish

Arctic Charr and Fourhorn Sculpin are the only species known to inhabit the Area. Other species which may occur in the Area are listed in Appendix 6.

6.4 Invertebrates

One hundred and twenty-two species of terrestrial arthropods including 74 insects, 38 mites, four spiders, and six springtails have been recorded at Polar Bear Pass.

The upland barrens support substantial populations of spiders and springtails, together with a few species of moths and their parasitic wasps. Marshes, thermokarst ponds, and other aquatic habitats produce very high populations of many different species of chironomid midges, *Spilogona*, and other flies. More than half the recorded insect species from Polar Bear Pass belong to the family Chironomidae. Nutrient-enriched sites, notably mammal dung and carrion, support flies such as blow flies, carrion flies, winter crane flies, and fungus gnats as well as mites and other species. Both the freshwater and terrestrial species are chiefly detritivores and saphrophages and their predators. Vertebrates, especially birds, carry parasites such as lice.

7.0 PAST AND PRESENT USES OF POLAR BEAR PASS

7.1 Archaeological Sites

Archaeological sites from the Palaeoeskimo (2000 BC - 1000 AD) and Thule Inuit (1000-1500 AD) occupations have been identified at Polar Bear Pass. The most prominent sites are of Thule origin and contain the remains of semi-subterranean winter dwellings. Houses were constructed from sod and stone with whale ribs and mandibles used as roof supports. Summer tent rings, meat caches, burial cairns, stone traps, and kayak and umiak supports are also often associated with these sites. Palaeoeskimo sites are fairly common and are usually characterized by patches of slightly lusher vegetation, circles of rock, and pieces of weathered bone.

Eighteen sites, most of unknown origin, are situated along Bracebridge Inlet. Three sites apparently belong to the Thule culture.

Approximately 48 sites are located along the east coast of Bathurst Island, within Polar Bear Pass. Large Thule sites are located north of Goodsir Inlet, at Black Point, south of the Inlet, and on Brooman Point. These sites contain the ruins of 10-24 houses. The remaining 44 sites are situated near Black Point, along the eastern and western coasts of Gregory Peninsula, and near an unnamed bay west of the peninsula. Evidence of Palaeoeskimo occupation has been noted at several sites.

Several sites have also been located in the interior areas of the pass. These include: three muskox and one caribou kill site of unknown origin, three sites containing Thule tent ring structures, and several sites related to the Palaeoeskimo tradition.

7.2 Hunting and Trapping

Modern-day use of Bathurst Island wildlife began when several Inuit families moved to Resolute Bay in 1953. Hunting activities diminished in the early 1960s as individuals shifted from full-time to part-time hunting. In 1974, the Inuit agreed to stop hunting Peary Caribou to allow the population to recover. The current Polar Bear quota for Resolute Bay is 38 animals, but few bears have been taken near Bathurst Island during the last 20 years. No one traps within Polar Bear Pass.

7.3 High Arctic Research Station

The High Arctic Research Station was established at Polar Bear Pass in 1968. The station is on the north side of the pass, midway between the east and west coasts. Much of the past research at the station has concentrated on the life histories of arctic animals and the behavioural adaptations that enable them to survive in the high arctic environment. The station is a permanent base where professional biologists and university students are able to undertake long-term studies.

7.4 Recreation

Due to its isolation, few persons have visited Polar Bear Pass for recreational activities. However, an increasing number of requests are being received as the wildlife resources of the Area become better known. Organized trips are available through a tourist outfitter from Resolute Bay.

7.5 Resource Exploitation

The Area has been subject to both mineral and hydrocarbon exploration. Seismic surveys were conducted during the mid-1970s and a "dry hole" was drilled near the southern border of the Area. All hydrocarbon permits were relinquished in 1982, prior to establishment of the NWA. Mineral potential (lead-zinc) is restricted to the Thumb Mountain Formation in the northeastern quadrant of the Area. In 1979 exploration results indicated that the lead-zinc potential was low and in 1982 the mineral claims were relinquished.

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Appendix 1. Regulations Respecting the Management of NWAs, pursuant to the *Canada Wildlife Act*.

General Prohibitions

3. (1) Subject to subsection (2), no person shall, in any wildlife area,

a) hunt or fish,

b) have in his possession any firearm, sling-shot, bow and arrow or any instrument that could be used for the purpose of hunting,

c) have in his possession any wildlife, carcass, nest, egg, or part of any of those things,

d) cut, pick, remove or wilfully damage any vegetation,

e) carry on any agricultural activity, graze livestock or harvest any natural or cultivated crop,

f) allow any domestic animal to run at large,

g) swim, picnic, camp, or carry on any other recreational activity or light or maintain a fire,

h) use or operate a boat, aircraft, or any other vehicle,

i) destroy or molest wildlife or carcasses, nest or eggs thereof,

j) remove, deface, damage, or destroy any artifact, natural object, building, fence, poster, sign, or other structure,

k) carry on any commercial or industrial activity,

l) disturb or remove any soil, sand, gravel, or other material, or

m) dump or deposit any rubbish, waste material, or substance that could degrade or alter the quality of the environment,

unless he does so under and in accordance with a permit issued by the Minister pursuant to section 4.

(2) Where the Minister has published a notice in a local newspaper or posted a notice at the entrance of any wildlife area or on the boundary of any part thereof permitting an activity described in subsection (1), any person may carry on the activity described in the notice if the activity is carried on in accordance with the notice.

Permits

4. The Minister may, on application, issue a permit to any person authorizing that person to carry on any activity described in section 3 in any wildlife area where that activity will not interfere with the conservation of wildlife.

5. A person to whom a permit has been issued pursuant to section 4 shall:

a) have the permit in his possession at all times while in the wildlife area; and

b) show the permit to any wildlife area officer forthwith on request.

6. Every permit expires on the expiry date set out in the permit or, where a permit does not contain an expiry date, on December 31st of the year in which it was issued.

7. The Minister may cancel, amend or suspend a permit where it is necessary to do so for the conservation of wildlife or wildlife habitat in a wildlife area.

8. Where the Minister has published a notice in a local newspaper or posted a notice at the entrance of any wildlife area or on the boundary of any part thereof prohibiting entry to any wildlife area or part thereof, no person shall enter the area or part thereof set out in the notice.

Powers of Wildlife Area Officers

9. A wildlife area officer has, for the purposes of the administration of the Act and these Regulations, the powers of a police constable.

10.(1) A wildlife area officer may, without a search warrant

a) stop, enter, and search any boat, aircraft, or other vehicle,

b) enter any premises, and

c) open and inspect any trunk, box, bag, package, or other receptacle

if he belives on reasonable grounds that the vehicle, premises or receptacle contains any article or thing taken or held in contravention of the Act or these Regulations.

(2) Where a wildlife area officer believes on reasonable grounds

a) that any article or thing is being or has been used in violation of or for the purpose of any violation of the Act or these Regulations, or

b) that in violation of the Act or these Regulations any article or thing is possessed or has been taken, caught or held,

he may seize the article or thing.

Appendix 2. Metes and Bounds of Polar Bear Pass NWA (Order-in-Council P.C. 1985-2663).

In the Northwest Territories; on Bathurst Island and adjoining waters; all that parcel being more particularly described as follows: all topographic features hereinafter referred to being according to edition 1 of the Graham Moore Bay and McDougall Sound map sheets numbers 68G and 68H respectively, of the National Topographic System, produced at a scale of 1:250,000 by the Army Establishment. R.C.E. at Ottawa, all coordinates quoted herein are Universal Transverse Mercator coordinates in Zone 14;

commencing at a point near Rapid Point having coordinates of 8 412 000 north and 540 000 east;

thence southerly to a point having coordinates of 8 412 000 north and 537 600 east;

thence southwesterly to a point having coordinates of 8 406 700 north and 531 300 east;

thence southeasterly to a point near Black Point having coordinates 8 401 500 north and 545 500 east;

thence southerly to a point having coordinates 8 373 800 north and 545 700 east;

thence southeasterly to a point having coordinates 8 368 700 north and 549 200 east;

thence southwesterly to a point near Brooman Point having coordinates 8 367 000 north and 548 000 east;

thence northwesterly to a point having coordinates 8 372 000 north and 542 000 east;

thence northerly to a point having coordinates 8 380 000 north and 541 600 east;

thence northwesterly to a point having coordinates 8 383 000 north and 536 200 east;

thence westerly to a point having coordinates 8 383 000 north and 472 600 east;

thence northwesterly to a point having coordinates 8 384 900 north and 470 900 east;

thence northerly to a point having coordinates 8 386 100 north and 470 800 east;

thence northeasterly to a point having coordinates 8 388 100 north and 475 600 east;

thence northerly to a point having coordinates 8 398 600 north and 476 400 east;

thence southwesterly to a point having coordinates 8 390 000 north and 440 000 east;

thence northerly to a point having coordinates 8 410 000 north and 440 000 east;

thence easterly to a point having coordinates 8 410 000 north and 500 000 east;

Appendix 2. Continued.

thence northeasterly to a point of commencement; said parcel containing about 2624 square kilometres.

Saving, excepting and reserving thereout and therefrom all mines, and minerals whether solid, liquid or gaseous and the right to work the same.

APPENDIX 3. Permits Required For Various Activities Within Polar Bear Pass National Wildlife Area.

Permit	Activity covered by Permit	Applicable Legislation	Contact for Permit and Application Procedures
Entry Permit	Applicable to all persons or parties who wish to enter the National Wildlife Area for any purpose.	Wildlife Area Regulations of the Canada Wildlife Act.	Manager, Northern Operations Canadian Wildlife Service, Box 637, Yellowknife, N.W.T., X1A 2N5 (403) 920-8530
Wildlife Research Permit	For all activities directly related to wildlife research.	Wildlife Licences and Permits, Regulations of the Wildlife Act.	Director, Wildlife Management Division, Department of Renewable Resources, Government of the Northwest Territories Yellowknife, N.W.T. X1A 2L9 (403) 873-7411
Archaeologist's Permit	For all archaeological work.	Northwest Territories Archaeological Sites Regulations of the Northwest Territories Act.	Senior Archaeologist, Prince of Wales Northern Heritage Centre Department of Culture and and Communications Government of the Northwest Territories Yellowknife, N.W.T. X1A 219 (403) 920-8839
Scientific Research Licence	For all scientific research, excluding wildlife research and archaeological work.	Scientists Act.	Science Administrator Science Institute of the Northwest Territories P.O. Box 1617, Yellowknife, N.W.T. X1A 219 (403) 873-7592
Land Use Permit	For activities that involve the use of vehicles, explosives, fuel caches, drilling equipment, earth moving and clearing equipment, hydraulic prospecting, campsites, or the preparation of lines, trails or rights-of-way.	Territorial Land Use Regulations of the Territorial Lands Act.	District Manager Indian and Northern Affairs Canada P.O. Box 2550, Yellowknife, N.W.T. X1A 2R3 (403) 920-8257
Fisheries Collection Permit	For all activities relating to the collection of fishes or marine mammals.	Fisheries Act.	Area Manager Department of Fisheries & Oceans Box 358, Iqaluit, N.W.T. X0A 0H0 (819) 979-6274

Notes: This is not a complete list. Additional permits may be required for specific purposes (e.g., collecting of wildlife specimens, removal of wildlife specimens from the N.W.T.); please consult the appropriate regulations for further information. Persons who wish to use the facilities of the High Arctic Research Station are required to obtain written permission from the Curator, Vertebrate Ethology Section, National Museum of Natural Sciences, Box 3443, Station D, Ottawa, Ontario, K1P 6P4.

Appendix 4. Checklist of Birds of Polar Bear Pass NWA.*

Common Name	Scientific Name	Status
Red-throated Loon	*Gavia stellata*	B
Pacific Loon	*Gavia pacifica*	R
Northern Fulmar	*Fulmaris glacialis*	R
Tundra Swan	*Cygnus columbianus*	R
Greater White-fronted Goose	*Anser albifrons*	R
Greater Snow Goose	*Anser caerulescens*	B
Atlantic Brant	*Branta bernicla*	B
Canada Goose	*Branta canadensis*	R
Northern Pintail	*Anas acuta*	A
Common Eider	*Somateria mollissima*	R
King Eider	*Somateria spectabilis*	B
Oldsquaw	*Clangula hyemalis*	B
Rough-legged Hawk	*Buteo lagopus*	B
Peregrine Falcon	*Falco peregrinus*	R
Gyrfalcon	*Falco rusticolus*	R
Willow Ptarmigan	*Lagopus lagopus*	RB
Rock Ptarmigan	*Lagopus mutus*	B
Sandhill Crane	*Grus canadensis*	R
Black-bellied Plover	*Pluvialis squatarola*	B
Lesser Golden-Plover	*Pluvialis dominica*	RB
Common Ringed Plover	*Charadrius hiaticula*	A
Ruddy Turnstone	*Arenaria interpres*	B
Red Knot	*Calidris canutus*	B
Sanderling	*Calidris alba*	B
Semipalmated Sandpiper	*Calidris pusilla*	A
White-rumped Sandpiper	*Calidris fuscicollis*	B
Baird's Sandpiper	*Calidris bairdii*	B
Pectoral Sandpiper	*Calidris melanotos*	B
Purple Sandpiper	*Calidris maritima*	B
Dunlin	*Calidris alpina*	R
Stilt Sandpiper	*Calidris himantopus*	R
Buff-breasted Sandpiper	*Tryngites subruficollis*	B
Red-necked Phalarope	*Phalaropus lobatus*	R
Red Phalarope	*Phalaropus fulicaria*	B
Pomarine Jaeger	*Stercorarius pomarinus*	B
Parasitic Jaeger	*Stercorarius parasiticus*	B
Long-tailed Jaeger	*Stercorarius longicaudis*	B
Thayer's Gull	*Larus glaucoides thayeri*	B
Glaucous Gull	*Larus hyperboreus*	B
Black-legged Kittiwake	*Rissa tridactyla*	R
Sabine's Gull	*Xema sabini*	B

Appendix 4. Continued.

Ivory Gull	*Pagophila eburnea*	R
Arctic Tern	*Sterna paradisaea*	B
Snowy Owl	*Nyctea scandiaca*	B
Western Kingbird	*Tyrannus verticalis*	A
Horned Lark	*Eremophila alpestris*	B
Common Raven	*Corvus corax*	R
Northern Wheatear	*Oenanthe oenanthe*	R
Water Pipit	*Anthus spinoletta*	R
White-crowned Sparrow	*Zonotrichia leucophrys*	A
Lapland Longspur	*Calcarius lapponicus*	B
Snow Bunting	*Plectrophenax nivalis*	B
Brown-headed Cowbird	*Molothrus ater*	A
Pine Siskin	*Carduelis pinus*	A

A = Accidental R = Rare
B = Breeding RB = Rare, Breeding

* This list has been compiled for the inland research area only. Additional coastal or marine species may utilize the NWA.

Appendix 5. Checklist of Mammals of Polar Bear Pass NWA.

Common Name	Scientific Name	Status
Arctic Hare	*Lepus arcticus*	R
Collared Lemming	*Dicrostonyx torquatus*	R
Beluga	*Delphinapterus leucas*	U
Narwhal	*Monodon monoceros*	U
Bowhead Whale	*Baleana mysticetus*	U
Arctic Wolf	*Canis lupus*	R
Arctic Fox	*Alopex lagopus*	R
Polar Bear	*Ursus maritimus*	R
Ermine	*Mustela erminea*	R
Walrus	*Odobenus rosmarus*	R
Bearded Seal	*Erignathus barbatus*	R
Ringed Seal	*Phoca hispida*	R
Peary caribou	*Rangifer tarandus*	R
Muskox	*Ovibos moschatus*	R

R = Resident
U = Unconfirmed

Appendix 6. Checklist of Fishes of Polar Bear Pass NWA.

Common Name	Scientific Name	Status
Greenland Shark	*Somniosus microcephalus*	H
Least Cisco*	*Coregonus sardinella*	H
Arctic Charr*	*Salvelinus alpinus*	R
Lake Trout*	*Salvelinus namaycush*	H
Ninespine Stickleback*	*Pungitius pungitius*	H
Threespine Stickleback*	*Gasterosteus aculeatus*	H
Polar Cod	*Arctogadus glacialis*	H
Arctic Cod	*Boreogadus saida*	H
Greenland Cod	*Gadus ogac*	H
Tooth Cod	*Arctogadus borisovi*	H
Sand Lance	*Amnodytes sp.*	H
Northern Wolfish	*Anarchinus denticculatus*	H
Slender Eelbenny	*Lumpenus fabriccii*	H
Fish Doctor	*Gymnelus viridis*	H
Saddled Eelpout	*Lycodes mucosus*	H
Pale Eelpout	*Lycodes pallidus*	H
Canadian Eelpout	*Lycodes polaris*	H
Polar Eelpout	*Lycodes turneri*	H
Rough Hookear	*Artediellus scaber*	H
Arctic Hookear	*Artediellus uncinatus*	H
Arctic Staghorn Sculpin	*Gymnocanthus tricuspis*	H
Twohorn Sculpin	*Icelus bicornis*	H
Spatulate Sculpin	*Icelus spatula*	H
Fourhorn Sculpin*	*Myoxocephalus quadricornis*	R
Shorthorn Sculpin	*Myoxocephalus scorpius*	H
Ribbed Sculpin	*Triglops pingelli*	H
Leatherfin Lumpsucker	*Eumicrotremus derjugini*	H
Atlantic Spiny Lumpsucker	*Eumicrotremus spinosus*	H
Gelatinous Snailfish	*Liparis fabricii*	H
Dusky Snailfish	*Liparis gibbus*	H
Kelp Snailfish	*Liparis tunicatus*	H

* = Freshwater species
R = Resident
H = Hypothetical